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## TMI COPPER WALL RESEARCH UPDATE



*by Ross Dunseath, PhD, TMI Research Coordinator*

*Ross is an electrical engineer who has been involved in consciousness and physiological monitoring research since his undergrad days at the Experiential Learning Lab at Duke University. He continued his education at Duke in both engineering and psi research, earning a PhD in electrical engineering in 1992. During that time, he was involved in the design and construction of instrumentation for neurofeedback, heart monitoring, and the detection of physiological correlates of psi phenomena.*

*He next worked with researchers at the University of North Carolina, designing and constructing high-density EEG data acquisition systems, with applications in simultaneous fMRI and EEG imaging. In 2010 he joined the staff at the Division of Perceptual Studies at the University of Virginia where he is the co-director of the Westphal Neuroimaging Lab and is engaged in physiological studies of psi phenomena.*

*TMI presents a great opportunity for research in consciousness and human potentials, and Ross is busy upgrading the technical foundation in the labs for launching all kinds of studies.*

We are pleased to report that TMI now has a functional Copper Wall Room.



What is that? In brief, it's a booth that has shiny copper panels on four sides (front, back, ceiling, and floor), and an electrically insulated glass floor. It was a design originally used by Tibetan monks as an aid in developing what they called "lucidity." Researchers at the Menninger Institute extended the concept to engage in the study of electric fields generated by the human body and found that energy healers were producing quite large electric fields, too large to be explained by currently accepted physiological mechanisms. Details of the Menninger experiments can be found in Green, et al, "Anomalous Electrostatic Phenomena in Exceptional Subjects," originally published in *Subtle Energies* 2,3 (1991) and reprinted in *Subtle Energies and Energy Medicine*, v10, Section 3, p. 244.

As the editors of *Subtle Energies and Energy Medicine* noted, Dr. Green's paper "exemplifies the emphasis on physics—as opposed to chemistry—in energy medicine. It uses conventional physical science and measurement as correlates of, and a springboard to, developing hypotheses concerning the domain of those (as yet) 'unmeasurables' of energy medicine." *In other words, physical energy fields, such as electric and magnetic, may be links into a supposed "subtle" energy that affects human health but has not been measured with currently accepted instrumentation.* Dr. Green's work demonstrated a relatively simple physical (electric) field measurement of an unrecognized human ability (large voltage pulses) that seems to be correlated with healing phenomena, or at least appears in some healers.

As we reported in The Monroe Institute (TMI) blog post "The Copper Wall Project," nothing has been done by the scientific community since, regarding replication and extension of the meticulous work by the Menninger group. However, an attempt was made to calculate the shape of the electric field in the body and provide a theoretical basis for the effect in Tiller, Green et. al., "Towards Explaining Anomalously Large Body Voltage Surges on Exceptional Subjects, Part I: The Electrostatic Approximation," *Journal of Scientific Exploration*, v9, #3, 1995.

In that paper, the authors used a dipole model to analyze data gathered from a "non-contact therapeutic touch specialist" during a 30-minute therapy session in which 15 voltage surges were recorded. A dipole is simply a pair of opposite charges separated by some amount of distance. The underlying theory proposed in this paper is a magnetic vector pulse generated by some unknown linkage to a "subtle substance" in the healer's body that generates a bipolar electric field, which in turn forces charged electrolytes in the body to form an expanding and then collapsing electric dipole. The electric dipole results in measurable voltage surges appearing on the body and in the copper walls.

What did these voltage surges look like? It depended on the location of the sensor (the four copper panels, and also a recording taken from direct contact with an earlobe). In general, they are pulse-like excursions lasting about 2 seconds. For the direct contact measure, the amplitude was in the vicinity of 50 volts in the plot shown in the paper, and the copper panels were registering 0.5 volt (V) to 1 V.

The authors report that the nine "exceptional" participants in the experiment produced body-potential surges ranging from 4 V to 190 V measured at the earlobe, lasting in a time range of 0.5s to 12.5s, with smaller amplitudes but similar pulse shapes appearing on the copper panels. The copper panel voltages are smaller since they are a non-contact electric field measurement taken off the body. This data gives us a guide for instrumentation in the TMI copper wall facility and how to look for effects. In other words, focus on short-lived pulses as opposed to steady-state oscillations or slowly changing DC potentials.

The dipole model analysis indicated a single dipole with an origin in the lower abdomen, and length approximately head to foot, could account for most of the observed voltages. The amount of charge involved is small, which is perhaps why the phenomenon has not been observed in previous physiological measurement (not to mention the scarcity of physiological measurement on healers in general). A small amount of charge can easily leak off the body through clothing, or else be obscured by static charge accumulation from friction.

Since the authors speculate that a pulse of magnetic vector potential may act as a bridge between a "subtle-body structure" and the physical-body structure, they suggest adding magnetic field detectors to the instrumentation to test this hypothesis. Fortunately, we have access to a 3-axis magnetometer at TMI through collaboration with the Division of Perceptual Studies (DOPS) at the University of Virginia. The authors also suggest adding "independent, electrically isolated microelectrodes at the center of each wall" to minimize an "opposite-ion condensation effect" that occurs with large metal panels. Fortunately, we can do that as well, because the TMI booth actually has two copper panels on the front and back walls with a narrow space in between, perfect for microelectrodes located in the centers of the walls.

Electric field measurements are sensitive to movement artifact, so we are video recording the participants and synchronizing the video and instrumentation measurements. This provides an opportunity for additional validation of a body field effect by using Biofield Imaging to see if anomalous body voltage events synchronize with changes in biofield images.

Check out Dr. Brian Dailey's TMI blog post, "Tips for Strengthening, Expanding, and Using Your Biofield with the Resonant Energy Balloon (REBAL)," in which he describes using biofield imaging in his Energy Medicine program at TMI to show expansion of the field visualization around participants performing the TMI REBAL technique. By using a video version of biofield imaging, perhaps it will be possible to see biofield changes when electric pulses occur for participants in the copper wall booth as well.

For now, our primary task is to see if the work done by Dr. Green and his team replicates in our copper wall facility at TMI. If we find some bonafide high-amplitude voltage pulses then all kinds of possibilities open up for further research and understanding of this human potential (pun intended).

As usual, we put out the challenge to the TMI community: show us your stuff and I should mention here that, TMI participants have shown us some pretty good stuff in Discovery programs with remote viewing and out-of-body activities.

Right now we're running screening sessions simply looking for the pulse, and we invite TMI program participants, especially if you are aware of energy body effects, to give it a try. Thirty-minute sessions in the Copper Wall booth are being scheduled on Monday and Wednesday afternoons during program breaks. If you are registered to attend a TMI residential program in the next six months and would like to volunteer to participate in the study, please email the scheduling coordinator.